

Appl. No. 10/022,645
Amdt. dated October 10, 2003
Reply to Office Action of September 11, 2003

PATENT

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

- A1
1. (Original) An apparatus for processing a substrate comprising:
a plurality of processing chambers;
a central transfer chamber housing a first robot in selective communication with the processing chambers; and
a load lock comprising,
a main chamber including a second robot in selective wafer communication with the first robot through a first slit valve,
a first load lock antechamber configured to receive a first wafer batch, the first load lock antechamber in selective wafer communication with the second robot through a second slit valve, and
a second load lock antechamber configured to receive a second wafer batch, the second load lock antechamber in selective wafer communication with the second robot through a third slit valve,
the first load lock antechamber and the second load lock antechamber in fluid communication with a vacuum pump and selectively evacuable from the main chamber and from each other.
 2. (Original) The apparatus of claim 1 wherein the first load lock antechamber and the second load lock antechamber are oriented linearly with respect to each other in a common plane with the main chamber.
 3. (Original) The apparatus of claim 1 wherein at least one of the first load lock antechamber and the second load lock antechamber are oriented orthogonally with respect to each other in a common plane with the main chamber.

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4. (Original) The apparatus of claim 1 wherein at least one of the first load lock antechamber and the second load lock antechamber are in communication with a pre- or post-processing apparatus selected from the group consisting of a heat source, a gas source, a wafer center-finding apparatus, a wafer orienting apparatus, and a metrology device.

5. (Original) The apparatus of claim 1 wherein the batch comprises a single wafer provided to the antechamber from a buffering table located outside the tool, the antechamber comprising a support member for receiving the wafer. N/A

A1 6. (Original) The apparatus of claim 1 wherein the batch comprises a plurality of wafers provided to the antechamber from a buffering table located outside the tool, the antechamber comprising a plurality of shelves for receiving the wafers.

7. (Original) The apparatus of claim 1 wherein the batch comprises an entire cassette of wafers provided to the antechamber from a buffering table located outside the tool, the antechamber comprising a support member for receiving the cassette.

8. (Original) The apparatus of claim 1 wherein one of the first and the second robot are selected from the group consisting of a rotatable robot, a shuttle robot, and an arm/knuckle robot.

9. (Withdrawn) A method of processing a substrate comprising:
loading a first substrate batch from a buffering table into a first load lock antechamber in selective communication with a main load lock chamber through a first slit valve;

utilizing a first robot positioned within the main load lock chamber to transfer a substrate from the first antechamber to the main load lock chamber while a second load lock antechamber in selective communication with the main load lock chamber through a second slit valve is loaded or unloaded with a second substrate batch; and

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utilizing a second robot positioned within a transfer chamber of the cluster tool in communication with the load lock main chamber and with a processing chamber of the cluster tool, to transfer the substrate from the main load lock chamber to the processing chamber.

A, 10. (Withdrawn) The method of claim 9 further comprising performing a pre- or post- processing step in at least one of the first load lock antechamber and the second load lock antechamber rather than in the processing chamber, thereby maximizing throughput of the processing chamber.

11. (Withdrawn) The method of claim 10 wherein evacuation and venting steps are performed in at least one of the first and second antechambers rather than in the processing chamber.

12. (Withdrawn) The method of claim 10 wherein a gas exposure step is performed in at least one of the first and second antechambers rather than in the processing chamber.

13. (Withdrawn) The method of claim 10 wherein a substrate center-finding step is performed in at least one of the first and second antechamber rather than in the processing chamber.

14. (Withdrawn) The method of claim 10 wherein a metrology step is performed in at least one of the first and second antechambers rather than in the processing chamber.

15. (Withdrawn) The method of claim 10 wherein a substrate orientation step is performed in at least one of the first and second antechambers rather than in the processing chamber.
